MICHIGAN ENVIRONMENTAL SCIENCE BOARD
LEAD PANEL

MEETING SUMMARY
MONDAY, MAY 16, 1994
DETROIT RECEIVING HOSPITAL
4201 ST. ANTOINE STREET, DETROIT, MI

PANEL MEMBERS PRESENT:

Dr. Jonathan Bulkley, Chair
Dr. George Wolff
Dr. Raymond Demers
Mr. Keith Harrison, MESB Executive Director

PANEL MEMBERS ABSENT:

Dr. David Long

DMB/EAD SUPPORT STAFF PRESENT:

Ms. Shirley Willis, Administration Officer
Mr. Jesse Harrold, Environmental Officer
Mr. Alex Morese, Graduate Student Intern
Ms. Patricia Fay, Secretary

I CALL TO ORDER:

Dr. Jonathan Bulkley, Chair, called the meeting of the Michigan Environmental Science Board (MESB) Lead Panel to order at 1:40 p.m.

II EXECUTIVE DIRECTOR'S REPORT:

Mr. Harrison reported that the Saginaw Cooperative, Sparrow, and Blodgett Hospitals practice chelation on an outpatient basis, but that they do not maintain records of the number of treatments or patients. Dr. Bulkley asked whether there was another approach to finding the data. Dr. Demers suggested that the Panel may be able to obtain the data from labs in Michigan. The data to be requested should include the number, age and zip codes of children testing at 45 ug/dl or greater.

Mr. Harrison reported on the efforts of the Michigan Department of Public Health (MDPH) and some of the local health departments to implement the Center for Disease Control's (CDC) lead poisoning prevention program for children. The CDC program was initiated in Michigan in January 1993. Blood lead level testing of children from high-impact areas (mostly Medicaid children) is just beginning. The MDPH has initiated its own blood lead level testing program under Head Start. Information regarding lead hazards and blood lead levels has been presented on television public service announcements, on vest buttons and through visitation by public health nurses. The

MDPH is just beginning to analyze the blood lead level data collected since January, 1993. All high blood lead levels are reported to MDPH and the local health care provider for follow-up. MDPH's training and certification program for blood lead level technicians is just beginning.

Mr. Harrison noted that based on information received from MDPH, there appears to be some difference of opinion among physicians regarding the recognition of the new target blood lead level of 10 ug/dl versus the older level of 45 ug/dl.

Dr. Joel Pounds, Wayne State University, indicated that the medical community is divided on the changed lead standard. Every time the standard is lowered there are some who disagree. Some thought the old blood lead standard was all right, until data 10 years later supported the leadership that pushed for lower guidelines. One reason for the lack of agreement among physicians is that lead poisoning is a complex disease and hard to recognize and diagnose. There is no pathognomonic expression of the disease, so it is hard to see that a child is really suffering. It is easy to believe that it is an inner city problem only, and that the problem has been solved with unleaded gasoline.

Dr. Demers asked about the source of the data about physician attitudes toward the lower ug/dl standard. Mr. Harrison said that it was a statement made during an interview with Ms. Mary Vandenbosch, MDPH. Dr. Demers noted that if it is indeed a problem, then legislation mandating screening may be necessary.

Mr. Harrison asked whether the Michigan Medical Society could have an impact on physician education. Dr. Demers suggested that the individual specialty professional societies, which are more active, may be more useful. He added that it takes a great deal of a physician's time to diagnose, report, and treat lead poisoning.

Mr. Harrison presented a revised draft outline for the lead report (see Attachment 1).

III PRESENTATIONS:

Dr. Ernest Chiodo, Medical Director of the Detroit Health Department, presented information on the Lead Poisoning Control Program conducted by the Detroit Health Department.

Dr. Chiodo stated that the Lead Poisoning Control Program has been in place since 1972. There are 3 components to the program: a lead clinic, a screening and education program, and an environmental investigation section. Parents can bring their children to the clinic for venous blood samples. Depending on the results of the samples, certain actions may be taken:

- < 9 ug/dl: No action is taken.
- 10-19 ug/dl: Patient is referred within one month for a medical evaluation, retesting and possible follow-up services.

- 20-40 ug/dl: Patient is referred within five working days for a complete medical evaluation and to one of the hospitals.
- 45-69 ug/dl: Patient is referred within 48 hours for complete medicalevaluation.
- > 70 ug/dl: Patient is referred immediately for treatment.

The environmental investigation center checks the home of any child tested above 20 ug/dl, to determine if it is the source of the contamination. If chelation is required, a clearance of the site is required by the hospital.

Dr. Chiodo stated the Lead Poisoning Control Program has a target population of about 109,000 children under age 6 in Detroit. Of these, 13,000 screenings were reported in 1993. Dr. Chiodo indicated that this was probably an underestimation because many patients are tested at clinics where the data are not always shared with the Health Department. Additionally, it appears that the clinics that do report, do not report negative results.

In Detroit, there were 403 cases diagnosed with blood lead levels greater than 20 ug/dl. After home inspections, it was determined that 97% cases could be attributed to lead hazards in the home (lead-based paint, lead pipes, toys, imported ceramics, etc.). The remaining 3% is assumed to originate from some other source (dust from parent's work site or from visiting some other contaminated site).

Dr. Bhambhani, Children's Hospital, stated that based on the volume of children seen at Children's Hospital, she believed the figure of 403 poisoned children of 13,000 tested to be low. Based on just 1992 data, there were 63 admissions for lead poisoning to Children's Hospital alone.

Mr. Harrison expressed a similar concern stating that according to data supplied by MDPH, the number of chelations performed in Detroit for 1991, 1992 and 1993 was only 74, 43 and 21, respectively. Mr. Harrison indicated that there appears to be a problem in terms of reporting blood lead levels and expressed concern about drawing any conclusions from these data. He suggested that it may be more wise for the Panel to contact the area hospitals individually rather that relying on the data reported to either MDPH or the Detroit Health Department.

Dr. Demers inquired if laboratories are required to report blood lead levels results to the Detroit Health Department. Dr. Chiodo indicated that it was his understanding they are for levels over 20 ug/dl, but that it still does not mean that they do.

Referring to the lack of testing, Ms. Kathi Wurzel, Dames & Moore, suggested that the immunization fair at Belle Isle might be an excellent place for lead screening. Dr. Demers added that tagging it to the required preschool immunizations might be a good idea, although it would be past the years of peak exposure.

Dr. Kanta Bhambhani, Children's Hospital, Detroit, Michigan, presented an overview of the lead program in operation at Children's Hospital.

According to Dr. Bhambhani, in 1992, Children's Hospital received 63 patient admissions with blood lead levels of greater than 45 ug/dl and about 200 referrals of blood lead levels over 20 ug/dl. In a given year, Children's Hospital will see more blood lead patients than any other Michigan facility. The hospital sees about 25 blood lead patients every Monday morning. These patients are not necessarily new patients however. The children at highest risk are from 1 to 6 years old. When a child is found with high blood lead level in the suburbs they are usually referred to Children's Hospital.

Dr. Bhambhani stated that the greatest concern of lead intake is the neuropsychological deficits that can occur from chronic exposure. These mental losses more than likely will not be manifested until the child cannot pass his school classes or graduate. When lead toxic symptoms do present themselves, they are usually attributed to some other ailment. The symptoms include temper tantrums, crankiness and a change in eating habits. Most patients showing an elevated blood lead level are asymptomatic, which leaves parents unaware of the condition. Some young patients may be asymptomatic with a blood lead level greater than 80 ug/dl, an emergency level. One patient did test at 140 ug/dl and was still asymptomatic, yet another child at this level would probably be dead from encephalopathy. Dr. Bhambhani stated that it was her position that no environmental lead level should be established and that all controllable sources of lead that can be reduced should be reduced.

Patients with blood lead levels between 10 ug/dl and 20 ug/dl are referred back to their own physicians. Chelation is prescribed when the blood lead level is greater than 45 ug/dl. Between 20 ug/dl and 45 ug/dl, nutritional correction is prescribed along with lead source removal. Good diets containing adequate levels of copper, zinc, iron, calcium and protein will deter the absorption of lead and protect the patient from the effects of lead. The effects of chelation on patients with blood lead level between 20 ug/dl and 45 ug/dl is not considered effective in controlling blood lead level; however, studies are on-going to make a conclusive determination possible.

Mr. Harrison asked how many high blood lead level patients were from outside Detroit. Dr. Bhambhani indicated that 5% to 10% of the patient load was from areas other than Detroit.

Dr. Wolff asked what was the effect of chelation on the blood lead level after a week of treatment. Dr. Bhambhani responded that initially, there is an immediate drop in blood lead level to below 10 ug/dl. Bone lead is then released and in a few weeks the blood lead level will be up to about 65% of the pretreatment level in the absence of any additional exposure to environmental lead sources.

Mr Harrison inquired if good nutrition is useful in treatment of patients with high blood lead levels, could it also be employed as a preventive measure, and might that be a contributing factor in part to the disparity between the number of children being seen

from the older homes in Detroit and the older homes in the suburbs. Dr. Bhambhani indicated that it might to some extent. As previously indicated, the child with the blood lead level of 140 ug/dl did not have any symptoms. He did have, however, a very good diet. So perhaps nutrition (enough minerals) does help to protect the child from the effects of lead poisoning.

Dr. Demers asked who generally refers blood lead patients to Children's Hospital and how well was the new 10 ug/dl blood lead level standard being accepted by other physicians. Dr. Bhambhani indicated that her patients were referred from all sources and no one source was notably outstanding. In terms of the acceptance of the new standard, Dr. Bhambhani indicated that it varied. Variables in the symptoms of lead poisoning to some degree justifies skepticism of the 10 ug/dl blood lead level standard. Most of the Detroit doctors, however, check for lead.

Dr. Bulkley asked if there was a map of Michigan showing reported high blood lead level cases. Dr. Bhambhani indicated that the Detroit Health Department should have a such a map for Detroit.

Dr. Wolff asked if the covering of lead paint was sufficient to abate lead exposure. Dr. Bhambhani answered that with time the modern water-base paint will peel off exposing lead paint again.

Dr. Bulkley asked if a neurological loss resulting from high blood lead levels was permanent. Dr. Bhambhani replied that the damage appears to be permanent and that last year a paper out of New York supported that conclusion.

Dr. Demers inquired how many new lead patients were seen in a year. Dr. Bhambhani said Children's Hospital sees from 200 to 300 new lead patients a year. Lately, Children's Hospital has seen more new patients, but, as a result of the screening program beginning at an earlier age, the blood lead levels have not been as high as in the past.

Dr. Joe Pounds asked if an iron deficiency has the same effect as lead poisoning. Dr. Bhambhani answered that it was true only on a symptomatic basis for neuropsychological defects, not motor functions.

Dr. Bulkley stated that it appeared that the solution to the lead problem was basically to remove the obvious lead hazards and employ good nutrition as far as clinical cases are concerned. Dr. Bhambhani said that this was also the solution to which Children's Hospital prescribes.

Dr. Demers inquired if Head Start and the WIC (Women, Infants and Children) programs had contributed to the implementation and the success of the lead programs at Children's Hospital. Dr. Bhambhani responded that the 2 programs had substantially supported their efforts to abate high blood lead levels in the Detroit area.

IV PUBLIC COMMENT AND QUESTIONS:

Dr. Bulkley asked for public comment. Dr. Godwin indicated that the Panel should include in its report a discussion on development of a public education program addressing paint removal.

Referring to previous information presented to the board on abatement procedures, both Dr. Bulkley and Mr. Harrison questioned the feasibility of correcting an exposure problem in the home, within some timely or economically feasible framework.

Dr. Bhambhani responded that it was not hospital policy, but a policy established by some physicians, who prefer not to release the child to the same danger or environmental hazard. If timely abatement cannot be arranged, placement in a relative's or friend's home is suggested (if cleared by a sanitarian).

Dr. Bulkley asked Dr. Rolf Deininger, University of Michigan, about alternatives to replacement of 200,000 lead service lines in Detroit at $2,000 each. Dr. Deininger said that a Detroit research program is currently simulating lead lines to determine how much lead is really leaching out. Detroit is also experimenting with adding phosphates to water to make the water less corrosive, and supporting his research on inserting liners into existing pipes. Flushing is currently the only advice which can be given to people. Dr. Deininger indicated also that the current U.S. Environmental Protection Agency's (USEPA) instructions for flushing underestimate the time it takes to flush. The time needed depends on the configurations of inside and outside pipes, water meters and faucets. Morning flushing is not adequate. As water sits during the day, more lead is leached in. Dr. Deininger feels that the USEPA advice to homeowners with brass pumps to flush for 30 seconds is also incorrect.

Dr. Bulkley asked whether there were short-term recommendations that the Panel could make; for instance, flushing the water for 5 minutes, before using it. Dr. Deininger answered that it is unlikely that anyone would wait for 5 minutes each morning before using the water. Beyond a public education program, the Panel must state clearly that there really is a problem and that pediatricians must accept the lower guideline of 10 ug/dl that the public health community is recommending.

Ms. Wurzel asked whether the adding of phosphates to water could become a major issue. Dr. Deininger answered that it will be an issue, but it may be a matter of choosing between protecting people and protecting fish.

Dr. Demers questioned if encapsulation is really such a low priority as was suggested at the last meeting since it appears to be cheaper and the CDC program seems to give it greater weight than other remedies. Dr. Bulkley indicated that the answer to Dr. Demers' question is unknown at this time.

Dr. Bulkley asked if data were available for children from older suburban homes. Mr. Harrison indicated that he had not come across any information for that category but would continue looking through the literature.

Mr. Harrison indicated that he will try to get Dr. Rosenman from Michigan State University to address the Panel on occupational exposure. Dr. Demers stated that he wanted some additional information on the Bluewater Bridge paint removal project and its effects on neighborhoods around it. Mr. Harrison indicated that staff contact the Michigan Department of Transportation for their records on the incident.

V PANEL ASSIGNMENTS:

Dr. Bulkley asked for Panel volunteers to begin the writing of the report. Dr. Bulkley indicated that he would begin Directive 1, Dr. Wolff said he would take section 1-G of the outline, Dr. Demers said he would take Section 1-C, and Mr. Harrison said he would begin Directive 3.

VI NEXT MEETING DATE:

The next meeting of the MESB Lead Panel will take place on Thursday, June 30, 1994. The location of the meeting will be announced on the agenda which will be sent out prior to the meeting.

VII ADJOURNMENT:

The meeting was adjourned at 3:50 p.m.

Keith G. Harrison, M.A., R.S., Cert. Ecol.
Executive Director
Michigan Environmental Science Board